

REMARKS

Upon entry of the present amendment, a new Abstract will have been submitted for entry into the present application. Additionally, the summary of the invention will have been revised to more fully correspond to the pending claims. Additionally, attached to the present Response, replacement sheets for Figs. 1, 3, 6, 7, 9 and 10 are being submitted for entry.

By the present Response, claims 1-18 have been amended and are submitted for reconsideration. The amendments to the claims in the present application are made to more clearly define Applicants invention with greater specificity and with greater emphasis on the novel features of the embodiments of the present invention.

Initially, Applicants wish to respectfully thank the Examiner for acknowledging their Claim for Foreign Priority under 35 U.S.C. § 119. Applicants further wish to thank the Examiner for confirming receipt of the certified copy of the foreign priority document in the present application.

Additionally, Applicants respectfully thank the Examiner for considering the documents cited in the Information Disclosure Statement filed in the present application on May 18, 2004 by the return of a signed and initialed copy of the PTO-1449 Form attached to the above-noted Information Disclosure Statement.

Turning to the merits of the Official Action, the Examiner objected to Figs. 1, 3-7, 9 and 10 because of informalities in the cross-hatching of elements shown in these Figures.

Initially, Applicants note that Figs. 4 and 5 contain no cross-hatching whatsoever and accordingly, the Examiner's objection with respect to these figures is respectfully

traversed. With regard to the other drawing figures objected to by the Examiner, attached to the present Response, Applicants have submitted replacement sheets for Figs. 1, 3, 6, 7, 9 and 10 with the cross-hatching modified therein so as to more accurately conform to the description of the respective elements or components described in the instant specification. Accordingly, Applicants respectfully request reconsideration of the outstanding objection to the drawings as well as reconsideration and withdrawal thereof.

In the outstanding Official Action, the Examiner objected to the Abstract as containing more than 150 words. By the present Response, Applicants have amended the Abstract to contain less than 150 words.

In the outstanding Official Action, the Examiner objected to claim 1 because of a language informality. By the present Response, Applicants have amended claim 1 to eliminate the noted informality. The Examiner is respectfully thanked for bringing this matter to Applicants attention so that it could be corrected.

In the outstanding Official Action, the Examiner rejected claims 1, 2, 3, 5, 6 and 9 under 35 U.S.C. § 102(b) as being anticipated by TATEMATSU et al. (JP 2002-082549). Applicants respectfully traverse the above rejection and submit that it is inappropriate with respect to the combinations of features recited in each of Applicants claims.

In the outstanding Official Action, the Examiner indicated that claims 4, 7, 8 and 10-18 are objected to for being dependent upon a rejected based claim. However, the Examiner indicated that these claims would be allowable if rewritten into independent form including all the limitations of the base claim and any intervening claims. By the

present Response, and without in any manner acquiescing in the propriety of the Examiner's above-noted rejection, Applicants have rewritten claims 4, 7, 8, 14, 17 and 18 into independent form including the limitations of the base claim. Accordingly, at least in accordance with the Examiner's indication, each of these claims as well as any claims dependent thereon should now be in condition for allowance. An indication to such effect in the next Official Action is respectfully requested in due course.

Turning to the rejection set forth by the Examiner against claims 1-3, 5, 6 and 9, as noted above, Applicants respectfully traverse the same and submit that the combination of features recited at least in each of Applicants independent claims 1, 5 and 6 are not taught, disclosed nor rendered obvious by the TATEMATSU et al. reference relied upon by the Examiner. Accordingly, Applicants respectfully request reconsideration and withdrawal of this rejection together with an indication of the allowability of all the claims pending in the present application. Such action is respectfully requested and is now believed to be appropriate and proper.

Applicants invention, as recited in claim 1, is directed to an image heating device which includes a heat generator that has an outer surface and that generates heat by induction heating. A heater is positioned close to the outer surface of the heat generator and is configured to heat the heat generator by induction heating. A positioner is located close to an end of the heater and the positioner is configured to position the heater with respect to the heat generator. A vibration absorber is attached to the positioner and is configured to viscoelastically absorb vibration of the heater produced by a vibration resulting from an electromagnetic repulsive force acting

between the heat generator and the heater when the heater heats the heat generator by induction heating.

Applicants invention, as recited in claim 5, is further directed to an image heating device which includes a heat generator that is provided on a roller having a rotation axis that has an outer surface and that generates heat by induction heating. A heater is positioned close to the outer surface of the heat generator and is configured to heat the heat generator by induction heating. A positioner is provided close to an end of the heater and is configured to position the heater with respect to the heat generator. A vibration absorber is attached to the positioner and is configured to absorb vibration of the heater produced when the heater heats the heat generator by induction heating. Further, a support is provided and is configured to rotatably support the rotation axis of the roller. The support and the positioner have respective outer circumferential surfaces configured to retain the vibration absorber therebetween to define a circumferential cross-sectional shape of the vibration absorber.

Additionally, Applicants invention, as recited in claim 6, is directed to an image heating device which includes a heat generator that extends between a plurality of rollers, each roller of the plurality having a rotation axis. The heat generator has an outer surface and generates heat by induction heating. A heater is positioned close to the outer surface of the heat generator and is configured to heat the heat generator by induction heating. A positioner is located close to an end of the heater and is configured to position the heater with respect to the heat generator. A vibration absorber is attached to the positioner and is configured to absorb vibration of the heater produced when the heater heats the heat generator by induction heating. A support is

provided to rotatably support the rotation axis of the roller, of the plurality of rollers, that is positioned adjacent to the heater. The support and the positioner have respective outer circumferential surfaces that are configured to retain the vibration absorber therebetween to define a circumferential cross-sectional shape of the vibration absorber.

According to the features of the present invention, as recited, e.g., in claim 1, the vibration absorber viscoelastically absorbs vibration of the heater. The vibration of the heater is produced by repulsive forces of a type that are specific to induction heating. In particular, when an exciting current flows within a heater, a heat generator is heated by means of an alternating electric field. Thus, a repulsive force acting in mutually repelling directions is generated based on Fleming's left-hand rule. A vibration force caused by such electromagnetic repulsive forces has a certain frequency corresponding to, e.g., a frequency of the excitation current. In other words, the vibration force has a dynamically oscillating energy that increases and decreases periodically in accordance with the excitation current. Since such vibrations have a dynamically oscillating energy, if absorbed viscoelastically, it is possible to attenuate, if not eliminate altogether, the oscillation energy during an induction heating process. At least this feature, in the claimed combination, is not taught, disclosed nor rendered obvious by TATEMATSU et al.

In setting forth the rejection, the Examiner asserted that TATEMATSU et al. discloses an image heating device including a heat generating section (21), a heating section (24), a positioning section (29), and a vibration absorption section as spring (39). It is respectfully submitted that the spring 39 of TATEMATSU et al. does not

satisfy the recitations of Applicants claim 1. In this regard, Applicants note that claim 1 recites, in combination, "a vibration absorber... configured to viscoelastically absorb vibration of said heater produced by a vibration resulting from an electromagnetic repulsive force acting between said heat generator and said heater when said heater heats said heat generator by induction heating". It is respectfully submitted that at least based upon this distinction, claim 1 is clearly patentable over TATEMATSU et al.

The vibration absorber of TATEMATSU et al. does not viscoelastically absorb vibration of a heater resulting from electromagnetic repulsive forces as defined in claim 1. In this regard, Applicants direct the Examiner's attention to paragraph [0141] of TATEMATSU et al. which, in translation, teaches as follows:

"Spring (39) urges an attachment member (29) with coil guide (28) towards a heat generating member (21a) so that the attachment member (29) comes into contact with movable side plate (36) and a clearance and positional relationship between the heat generating member (21a) and an exciting coil (25) and the coil guide (28)."

In other words, the spring 39 is provided to generate a static rather than a dynamic pressing force against the attachment member 29. Thus, the spring 39 cannot attenuate the dynamic energy caused by the electromagnetic repulsive force acting between the heat generator and the heater. Rather, the static pressing force of spring 39 operates to maintain the dynamic vibration resulting from electromagnetic repulsive force acting between the heat generator and the heater. Thus, claim 1 is clearly patentable over the disclosure and teachings of TATEMATSU et al.

Claim 5 recites, inter alia, a vibration absorber, wherein the support and the positioner have respective outer circumferential surfaces configured to retain the

vibration absorber therebetween to define a circumferential cross-sectional shape of the vibration absorber. At least the above-noted feature, in the previously set forth combination of features of claim 5, is not taught, disclosed nor rendered obvious by TATEMATSU et al.

As a result of the above-noted feature, in the claimed combination, even when the stresses that are generated act to shift the positioner in the circumferential direction, it is possible to effectively absorb the stress and to prevent the respective surfaces of the heater and the heat generator, which typically have a circumferential shape and are positioned opposite to each other, from coming into contact with each other.

In direct contrast, the above-noted features, as recited in claim 5 are not disclosed by TATEMATSU et al. In particular, the vibration absorber of TATEMATSU et al. (spring 39) is not positioned between the "supporting section 34 and the positioning section 29" as clearly illustrated in Fig. 9. Nor is the shape of the spring 39 defined by the positioner and support. Accordingly, at least for the above reasons, it is respectfully submitted that claim 5 is also clearly patentable over the disclosure of TATEMATSU et al.

Claim 6 defines, inter alia, that the support and the positioner have outer circumferential surfaces that are configured to retain the vibration absorber therebetween to define a circumferential cross-sectional shape of the vibration absorber. As noted above with respect to claim 5, and as is clear with reference to Fig. 9 of TATEMATSU et al., the vibration absorber is not between the positioner and the support. Nor is the shape of the vibration absorber defined by the positioner and support. Accordingly, at least for these reasons, it is respectfully submitted that the

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combination of features recited in claim 6 are clearly patentable over TATEMATSU et al.

Accordingly, for each of the above-noted reasons and certainly for all of the above-noted reasons, it is respectfully submitted that all the claims in the present application are clearly in condition for allowance and Applicants respectfully request an indication to such effect in due course.

Dependent claims 2, 3 and 9 are patentable at least for the reasons set forth above with respect to the independent claims from which they depend as well as based upon their own recitations.

SUMMARY AND CONCLUSION

Applicants have made a sincere effort to place the present application in condition for allowance and believe that they have now done so. Applicants have amended several of the objected-to claims into independent form so as to clearly render them allowable at least in accordance with the Examiner's indication.

Applicants have submitted a new Abstract for entry into the present application and have revised a paragraph of the disclosure so as to be more fully consistent with an embodiment of the invention as now being claimed. Additionally, a number of replacement pages of drawings have been submitted in order to overcome the Examiner's objection to the disclosure.

With respect to those claims that have not been rewritten into independent form in accordance with the Examiner's indication of allowable subject matter, Applicants have discussed the disclosure of the applied reference and have pointed out the shortcomings of the reference with respect to the features of Applicants claims. Applicants have also discussed the recitations of the claims and have pointed out the shortcomings and deficiencies of the reference cited with respect to such recitations. Accordingly, Applicants have provided a clear evidentiary basis supporting the patentability of all the claims in the present application and respectfully request an indication to such effect in due course.

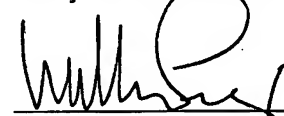
In amending the claims, Applicants have also revised the language of the claims to more clearly define Applicants invention with clarity and specificity while not narrowing the scope of the claims.

Any amendments to the claims which have been made in this amendment, and which have not been specifically noted to overcome a rejection based upon the prior art, should be considered to have been made for a purpose unrelated to patentability, and no estoppel should be deemed to attach thereto.

Should the Commissioner determine that an extension of time is required in order to render this response timely and/or complete, a formal request for an extension of time, under 37 C.F.R. §1.136(a), is herewith made in an amount equal to the time period required to render this response timely and/or complete. The Commissioner is authorized to charge any required extension of time fee under 37 C.F.R. §1.17 to Deposit Account No. 19-0089.

Should the Examiner have any questions or comments regarding this Response, or the present application, the Examiner is invited to contact the undersigned at the below-listed telephone number.

Respectfully submitted,
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